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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/716,678

11/20/2003

Yoshihiko Hori

8004-1015

7373

466

7590

10/04/2005

YOUNG & THOMPSON  
745 SOUTH 23RD STREET  
2ND FLOOR  
ARLINGTON, VA 22202

EXAMINER

WAMSLEY, PATRICK G


ART UNIT

PAPER NUMBER

2819

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/716,678	<b>Applicant(s)</b> HORI, YOSHIHIKO 	
	<b>Examiner</b> Patrick G. Wamsley	<b>Art Unit</b> 2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 3,7-14,16-18 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,16,19,20 and 22-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Restriction***

Claim 13 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 08/22/2005. Claims 3, 7-12, 14, 16-18 were previously withdrawn from consideration. Claim 21, equivalent to non-elected claim 3, is also withdrawn from consideration. Claims 1-2, 4-6, 15, 19-20, 22-24 are pending.

### ***Specification***

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-6, 15, 19-20, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art, hereafter APA in view of U.S. Patent 5,974,464 to Shin et al, hereafter Shin.

APA provides a data transfer system comprising a data transmission circuit [210: Fig. 1] and a data reception circuit [220]. APA's transmitter comprises an encoder [211] with a parallel to serial conversion circuit [214] and APA's receiver comprises a decoder [222] with a serial to parallel conversion circuit [223].

Unlike independent claims 1, 15, and 19, APA lacks a changing point counter.

In contrast, Shin [Figures 10 and 11] describes a procedure of counting transitions, functionally equivalent to the recited "changing points," in sets of bits, and reducing disparity and achieving DC balance through selective inversion [col. 13, lines 27-28]. At the time of the invention, it would have been obvious to one of ordinary skill in the art to have applied Shin's teachings to APA. The motivation would have been to minimize EMI, as suggested by Shin [abstract].

For claims 2 and 20, Shin's discrimination bit is added as a first or last bit. For claims 4 and 22, Shin's transition counter [74] counts the number of transitions [T] and triggers bit inversion logic [90] when excess transitions occur [column 11, lines 30-66]. The recited discrimination bit corresponds to Shin's last bit line, informing the decoder [160] as to whether bits within the byte have been complemented [col. 14, line 12].

For claims 5 and 23, Shin uses a 21-bit window [col. 16, line 64], an odd number, measuring whether four or more logical transitions have occurred [col. 11, line 48].

For claims 6 and 24, Shin's largest permissible integer is three, which appears functionally equivalent to the recited threshold. Moreover, the changing point counter circuit appears to match Shin's design, checking whether the number of logical transitions is greater than or less than three.

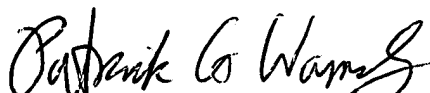
### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,693,918 to Dallabetta et al shows buffers for serializer / deserializer [SERDES] word alignment.

Art Unit: 2819

U.S. Patent 6,041,370 to Guyt shows a fading ones counter, ensuring that only a single bit changes between consecutive counts [col. 2, lines 36-37]. U.S. Patent 5,999,571 to Shin et al selectively complements bits within data blocks having more than a predefined number of logical transitions. U.S. Patent 5,825,824 to Lee et al couples a transition counter [74] to bit inversion logic [90]. U.S. Patent 5,648,776 to Widmer discloses a serial to parallel converter. U.S. Patent 5,598,156 to Hush et al shows a serial to parallel converter. U.S. Patent 5,576,980 to Whetsel describes a serializer circuit. U.S. Patent 4,901,076 to Askin et al uses a ring counter for converting serial and parallel data streams. U.S. Patent 4,369,504 to Hanmura provides a serial-parallel signal converter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick G. Wamsley whose telephone number is (571) 272-1814. The official facsimile number is (571) 273-8300. An alternate facsimile number, (571) 273-1814, should only be used for unofficial documents.

  
**Patrick G. Wamsley**

September 30, 2005